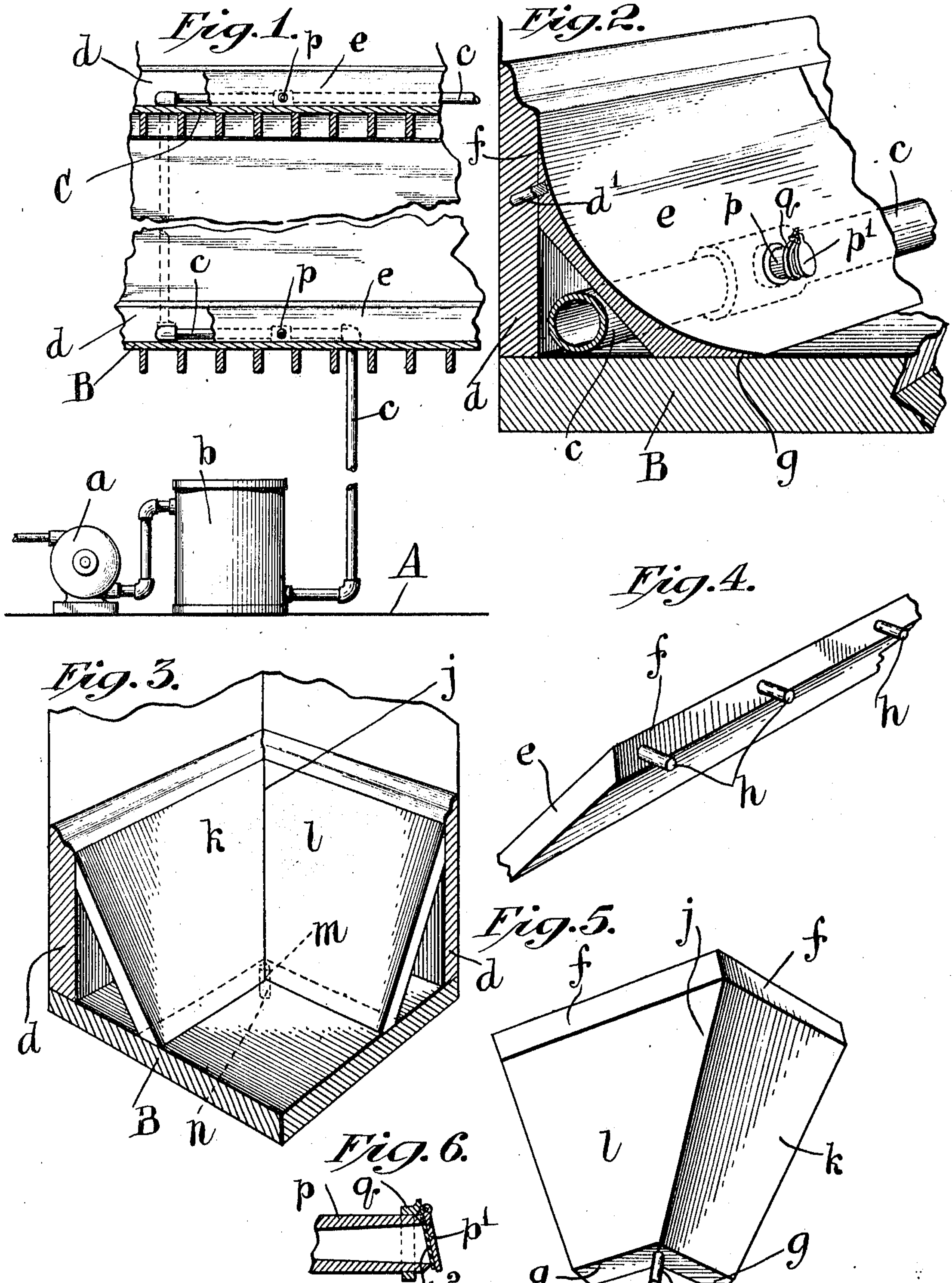
C. W. NICHOLS.

ARRANGEMENT FOR INCLOSING VACUUM CONDUIT SYSTEMS.

APPLICATION FILED JULY 20, 1909.

1,026,406. Patented May 14, 1912.



Attest:

C. S. Mitchell

P. V. Wening

Inventor:

Charles W. Nichols

by Frank T. Wentworth

his Atty.

UNITED STATES PATENT OFFICE.

CHARLES W. NICHOLS, OF RAHWAY, NEW JERSEY.

ARRANGEMENT FOR INCLOSING VACUUM CONDUIT SYSTEMS.

1,026,406. Specification of Letters Patent. Patented May 14, 1912.

Application filed July 20, 1909. Serial No. 508,629.

To all whom it may concern:

Be it known that I, CHARLES W. NICHOLS, a citizen of the United States, residing at Rahway, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Arrangements for Inclosing Vacuum Conduit Systems, of which the following is a specification, reference being had therein to the accompanying drawings, which form a part thereof.

My invention relates to arrangements for inclosing conduit systems for vacuum cleaners and more particularly to a system adapted for use in piping a house with concealed pipes.

The main object of the invention is to provide means whereby a line of pipe may be run about a room without being exposed, the covering means therefor having the twofold object of forming a housing inclosing the said pipes and at the same time preventing the accumulation of dust and dirt thereabout, thus insuring good sanitary conditions within the room and about the pipe.

A further object is to provide means whereby pipes may be laid about a room without being set into the walls and without being themselves exposed, or being protected by a covering which will be conspicuous or objectionable.

A still further object is to provide means whereby an old house may have pipes laid throughout without the necessity for tearing out the walls about a room and without exposing the pipes to view within a room.

A still further object is to provide means whereby pipes may be laid about a room while being covered in a manner to permit the exposure of couplings for the purpose of attaching a cleaning apparatus thereto.

A still further object is to provide a conduit system for vacuum cleaners which may be readily installed in a house, the original plans for which did not provide for the necessary piping, and wherein the suction device alone or the suction device and separator may be located in the cellar or at a point removed from the living portion of the house.

The invention consists primarily in the novel features of construction and combination of parts as are hereinafter set forth and described and more particularly pointed out in the claims hereto appended.

Referring to the drawings:—Figure 1 is a conventional showing of a portion of a house piped by means of my improved system; Fig. 2 is a detailed view of a small portion of a room showing the end of one sheathing for the conduit in position; Fig. 3 is a view of a corner of a room showing the corner attachment of my conduit system, the outer surface of said sheathing differing from that shown in Fig. 2; Fig. 4 is a perspective view of the end section of a straight line of sheathing adapted to be used with the corner fitting shown in Fig. 3; Fig. 5 is a perspective view of the corner section of sheathing shown in Fig. 3, the view being taken from the back thereof, and, Fig. 6 is a detailed sectional view of a coupling projecting through said sheathing as shown in Fig. 2.

Like letters refer to like parts throughout the several views.

In the accompanying drawings, I have shown at A, B and C, conventionally, three floors of a house, for the purpose of illustrating the application of my conduit system thereto. On the two upper floors B and C, a portion of the sheathing is broken away to disclose a portion of the pipes in full lines, in order to more fully disclose the relation of parts. The level A would, ordinarily, indicate cellar flooring, in most cases it being desirable to have the dust and dirt conveyed direct to the cellar where it will be deposited in the separator and may be removed at leisure.

On the level A, I have shown an ordinary rotary suction pump *a* coupled to a separator *b* which is in communication through the pipe line *c* with each room fitted with vacuum cleaner connections. The piping in the room is run close to the surbase *d* a vertical line of piping being run through a hole bored in the floor, or run from floor to floor between the walls, as indicated in the dotted lines in Fig. 1. This manner of laying the suction pipes would prove unsightly and in order to remove this unsightliness, as well as to protect the pipes and prevent the accumulation of dust and dirt thereabout, I provide a sheathing adapted to fit closely to the floor and to the surbase, leaving a suitable opening thereunder for the said vacuum pipes. This sheathing forms a conduit for the accommodation of a pipe line, which pipe line may either be an air or an electric conduit, for the purpose of locating couplings within the room to which couplings the cleaning ap-

paratus may be connected. The conduit is formed by the space between the sheathing, and within the angle between the floor planking B or C and the surbase *d* which may take any desired form and will be controlled by the contour of the inner face of the sheathing.

The sheathing consists of a plurality of short independent lengths of sheathing *e*, the top and bottom edges of which are beveled off as at *f g* so as to lie upon planes at substantially right angles to each other, and thus conform to and insure a perfect fit between the edges thereof and the floor B or C and the surbase *d* respectively. To insure permanency in the positioning of the sheathing forming the conduit, I supplement this construction by means securing the respective pieces of sheathing making up the conduit in its entirety in position relative to the surbase and to the floor adjacent thereto. The application of this means differs in a straight run of sheathing, and in the angle pieces forming the corners or turnings, but in each instance preferably consists of a dowel *h* adapted to have a driving fit in a dowel hole bored in the surbase or floor, thus insuring a good fit of the sheathing relative to the surbase and at the same time permit it to be readily removed for purposes of inspection or repairs. On the straight run of sheathing, the dowel or dowels will extend at a slight downward angle relative to the edge *f* of the sheathing, the coöperating bore in the surbase extending at the same angle and thus causing a slight wedging action in the downward movement of the sheathing as it is applied, which will have the effect of drawing it against the surbase as well as form an interlocking means between the sheathing and the trim which would prevent the accidental displacement of the sheathing.

It will be observed that by the construction heretofore described, the conduit for the vacuum cleaner pipes may be quickly formed within the room after the pipe lines have been properly laid, and that the labor required would not be of a high order, or require special skill. The sheathing *e* will preferably be of wood, and may thus be made to conform with the trim of the room and thus not be conspicuous or objectionable in appearance. The outer surface of the sheathing *e* may be curved as shown in Fig. 2, or flat as shown in Figs. 3 to 5 inclusive, or may take any other desired design or cross section.

The sheathing *e* being provided in regular lengths the fitting of the abutting ends of adjoining sections will be accomplished solely through the location of the dowel holes *d'* in the surbase, thus avoiding the necessity for any joining of ends, which, ordinarily, would require accurate work and the attention of a skilled joiner. In forming corners or angles, however, it will be necessary to miter and join the ends of straight sections, to avoid which, I provide corner fittings *j* consisting of two sections *k l* of the same configuration as the sheathing sections *e*, the edges *f* and *g* of which extend at substantially right angles to each other, the two sections *k l* being permanently joined and furnished complete, ready for application to a room. The application of this corner section makes it practically impossible to utilize dowel pins extending from the top edge *f* and to obviate this difficulty, I provide a dowel pin *m*, extending downwardly from a point adjacent to the angle of the sections *k l*, adapted to coöperate with a dowel hole *n* in the floor B or C, the said dowel pin and dowel hole being pitched rearwardly and toward the surbase so as to secure a wedging action toward said surbase.

Some of the sheathing strips *e* are provided with openings *o* therethrough for the coupling nipple *p* of the conduit, said coupling end having a tapered bore adapted to coöperate with a tapered block so as to cause the suction within the piping *c* to tighten the coupling. To avoid loss through the accidental opening of the said nipple, I provide it with a flap *p'* carrying a gasket p^2 mounted on a ring *q* having a driving fit over the end of said nipple *p*, and bevel the end of said nipple so as to cause the wedge of the said flap to automatically seal the mouth thereof. If desired, the end of this nipple may also be chamfered off or reduced to a knife edge to insure a tight joint.

From the foregoing description it is apparent that piping may be laid about a room without removing any of the trim or mutilating same to an objectionable extent, and yet have said piping completely inclosed in a manner which will not be unsightly or will not materially obstruct or reduce the floor space. The sheathing *e* may be quickly installed or removed and will be sanitary as preventing the accumulation of dust and dirt in the angle between the base board and the floor planking. The sheathing of my conduit system may be made to conform to the trim of a room and may be inexpensively produced and installed. This manner of use is apparent from the foregoing description and it is equally apparent that the details of construction shown in the accompanying drawings may be varied without departing from the spirit and scope of the invention.

Having described the invention, what I claim as new, and desire to have protected by Letters Patent, is:—

1. In an arrangement for inclosing conduit systems for vacuum cleaners a corner fitting consisting of two sections of sheath-

ing having their adjoining ends mitered and joined permanently, the upper and lower edges of each of said sections being beveled to conform to the surbase and the flooring at the corner of a room and means alined with the miter joint whereby the fitting may be set relative to the floor and said surbase.

2. In an arrangement for inclosing conduit systems for vacuum cleaners a corner fitting consisting of two sections of sheathing having their adjoining ends mitered and joined permanently, the upper and lower edges of each of said sections being beveled to conform to the surbase and the flooring at the corner of a room, said flooring having a dowel hole bored therein projecting downwardly and at an angle toward the base board, and a dowel pin mounted on the lower beveled edge of said fitting and adapted to enter said dowel bore whereby said fitting will be forced toward said surbase.

In witness whereof, I have hereunto affixed my signature, this 26th day of April, 1909, in the presence of two witnesses.

CHARLES W. NICHOLS.

Witnesses:
P. V. WENING,
P. F. SONNEK.